

Exercise 7.21 – Brønsted Lowry

Q721-01 In the equilibrium shown below, which are the two conjugate bases?

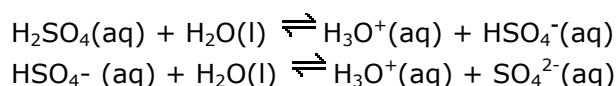


- A. CH_3COOH and H_2O
 - B. CH_3COO^- and H_3O^+
 - C. CH_3COOH and H_3O^+
 - D. CH_3COO^- and H_2O
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Q721-02 Which statement describes the Brønsted-Lowry behaviour of H_2O molecules in aqueous solutions?

- A. They cannot act as either acids or bases
 - B. They can act as acids but not bases
 - C. They can act as acids or bases when reacting with each other
 - D. They can act as acids when reacting with HCl molecules
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Q721-03 The ionisation of sulphuric acid is represented by the equation below:



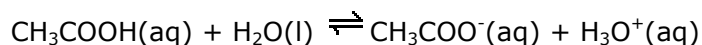
Which of the following is the conjugate base of HSO_4^- ?

- A. $\text{H}_2\text{O}(\text{l})$
 - B. H_3O^+
 - C. H_2SO_4
 - D. SO_4^{2-}
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Q721-04 Which one of the following species can act as both a Brønsted-Lowry acid and base in aqueous solution?

- A. CH_3COOH
 - B. NO_3^-
 - C. H_3PO_4
 - D. OH^-
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Q721-05 In the equilibrium below:



Which species represent a conjugate acid-base pair?

- A. CH_3COOH / H_2O
 - B. CH_3COO^- / H_3O^+
 - C. H_2O / CH_3COO^-
 - D. H_3O^+ / H_2O
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Exercise 7.21 – Brønsted Lowry

Q721-06 A Brønsted-Lowry base is defined as a substance which:

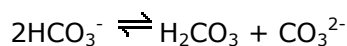
- A. accepts H⁺ ions.
- B. produces OH⁻ ions.
- C. conducts electricity.
- D. donates protons

Q721-07 Which of the pairs below is a conjugate acid- base pair in the following reaction?



- A. HNO₃ and H₂SO₄
- B. HNO₃ and H₂NO₃⁺
- C. HNO₃ and HSO₄⁻
- D. H₂NO₃⁺ and HSO₄⁻

Q721-08 In the reaction:



the hydrogen carbonate ion, HCO₃⁻ is functioning as:

- A. a Brønsted-Lowry acid only.
- B. a Brønsted-Lowry base only.
- C. both a Brønsted-Lowry acid and a Brønsted-Lowry base.
- D. neither a Brønsted-Lowry acid nor a Brønsted-Lowry base.

Q721-09 In the reaction between the hydrogen sulphate ion and water, HSO₄⁻ + H₂O ⇌ H₃O⁺ + SO₄²⁻, the water acts as:

- A. an acid
- B. a base
- C. a salt
- D. an inert medium

Q721-10 Which one of the following species acts as an acid according to the Brønsted model of acids and bases?

- A. O²⁻
 - B. NH₄⁺
 - C. CH₄
 - D. NH₂⁻
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